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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/661,579 | 09/15/2003 | Shinji Nakagawa | 056207.51363C1 | 8060 |
| 23911 | 7590 | 11/02/2005 | EXAMINER | |
| CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300 | | | TRAN, DIEM T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3748 | |

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/661,579 | NAKAGAWA ET AL. |
| | Examiner | Art Unit |
| | Diem Tran | 3748 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1 and 4-8 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: ____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Applicant's Preliminary amendment filed on 9/15/03 has been entered. In this amendment, claims 1, 4-8 have been amended and claims 2,3 have been canceled. Overall, claims 1,4-8 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (JP 05-033705).

Regarding claim 5, Nishikawa discloses a control unit for an internal combustion engine including the three way catalyst (19) (see Figure 1) on an exhaust side, wherein control unit has a means for detecting the operating state of the internal combustion engine (see translation, page 4, parts [0030] - [0033]), and wherein control unit alternately controls the A/F between a rich state and a lean state in order to quicken the activation of the three way catalyst based on the operating state (see translation, page 4, parts[0027] – [0030]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamashita (US Patent 6,311,482) in view of Mori et al. (US Patent 6,334,306).

Regarding claim 1, Yamashita discloses a control unit for an internal combustion engine having a three- way catalyst (14) on an exhaust side of the engine(see Figure 2), said control unit being configured alternately to control the A/F between a rich state and a lean state in order to quicken the activation of said three-way catalyst when upon starting of said internal combustion engine (see col. 11, lines 57-64); however, fails to disclose an HC adsorbent on the exhaust side. Mori teaches that it is conventional in the art, to utilize an HC adsorbent (43) in the exhaust passage (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized an HC adsorbent, as taught by Mori in the Yamashita device for more efficiently reducing pollutants exiting from the engine, so as to improve the air pollution control.

Regarding claims 6, 7, Yamashita discloses a control unit for an internal combustion engine including a three- way catalyst (14) and an adsorbent (15) operately arranged in order on an exhaust side of the engine (see Figure 1), said control unit having means for detecting the temperature of said adsorbent (see col. 12, lines 6-11), and being configured to alternately

control the A/F between a rich state and a lean state to change the temperature of said adsorbent (see col. 11, lines 64-67); however, fails to disclose said adsorbent being an HC adsorbent. Mori teaches that it is conventional in the art, to utilize an HC adsorbent (43) in place of the NOx adsorbent (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized an HC adsorbent, as taught by Mori in the Yamashita device for more efficiently reducing a particular pollutant component existing in the exhaust gas.

Regarding claim 8, Yamashita discloses a control unit for an internal combustion engine having a three way catalyst (14) and an adsorbent (15) on an exhaust side of the engine, said control unit being configured alternately to control the A/F between a rich state and a lean state in order to change a temperature of said adsorbent (see col. 11, lines 64-67); however, fails to disclose that the three way catalyst and adsorbent are disposed in the same carrier on an exhaust side and said adsorbent being HC adsorbent. Mori teaches that it is conventional in the art, to utilize an HC adsorbent (43) and three-way catalyst in the same carrier (see Figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have used an HC adsorbent as taught by Mori, since the use thereof would have reduced pollutant contained in the exhaust gas, so as to improve the emission control system.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. (JP 05-033705) in view of Karlsson et al. (US Patent 6,041,593).

Nishikawa discloses a control unit for an internal combustion engine including the three-way catalyst (19) on an exhaust side of the engine, said control unit having a means for detecting a cooling water temperature of the engine (see translation, page 5, part [0030]), and being configured to alternately control the A/F between a rich state and a lean state in order to quicken the activation of the three-way catalyst when the temperature of cooling water of the engine is a value within the predetermined fixed range (see translation, pages 4, 5, parts [0027]-[0030]); however, fails to disclose that a three-way catalyst temperature is determined from a cooling water temperature of the engine. Karlsson teaches that a catalyst temperature can be determined based on a cooling water temperature of the engine (see col. 6, lines 36-43).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Karlsson in Nishikawa, since the use thereof would have provided a different means for detecting the catalyst temperature.

Response to Arguments

The Applicant argued that there is no suggestion or motivation to combine the Yamashita and Mori references cited by the Examiner. The Examiner respectfully disagrees, since the Yamashita reference discloses changing an air fuel ratio to lean and rich alternately to heat up the catalyst device and Mori reference discloses using a HC purification device in the exhaust gas to purify the HC pollutants emission from the engine. It is obvious for one having ordinary skill in the art, to add an HC adsorbent to an exhaust system for the purpose of further

purifying the exhaust gas prior to releasing to the atmosphere.

Additionally, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (571) 272-4866. The examiner can normally be reached on Monday -Friday from 8:30 a.m.- 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (571) 272-4859. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the

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Private PAIR system, contact the Electronic Business Center (EBC) at 800-786-9199 (toll-free).



Diem Tran
Patent Examiner
Art unit 3748

DT
October 27, 2005



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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700